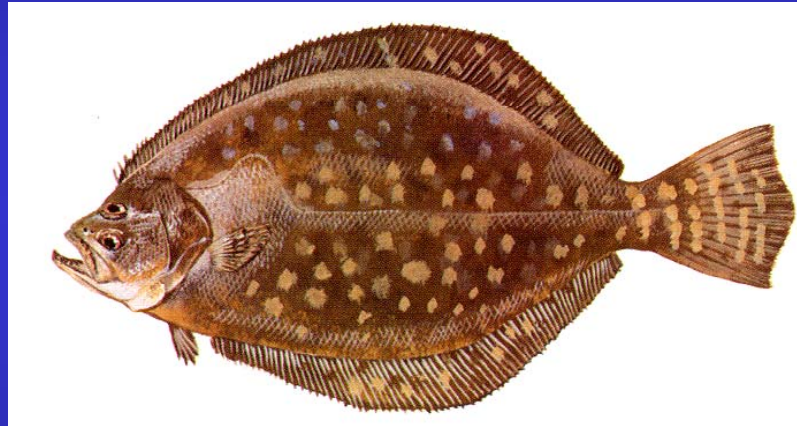


Stock Status of North Carolina Southern Flounder, 1991-2007



Helen Takade-Heumacher
NC Marine Fisheries Commission Meeting
January 22, 2009



Introduction

- Previous stock assessment conducted in 2004 with data from 1991-2002
 - Concluded the stock was overfished and overfishing was occurring
- Stock as re-assessed through 2007

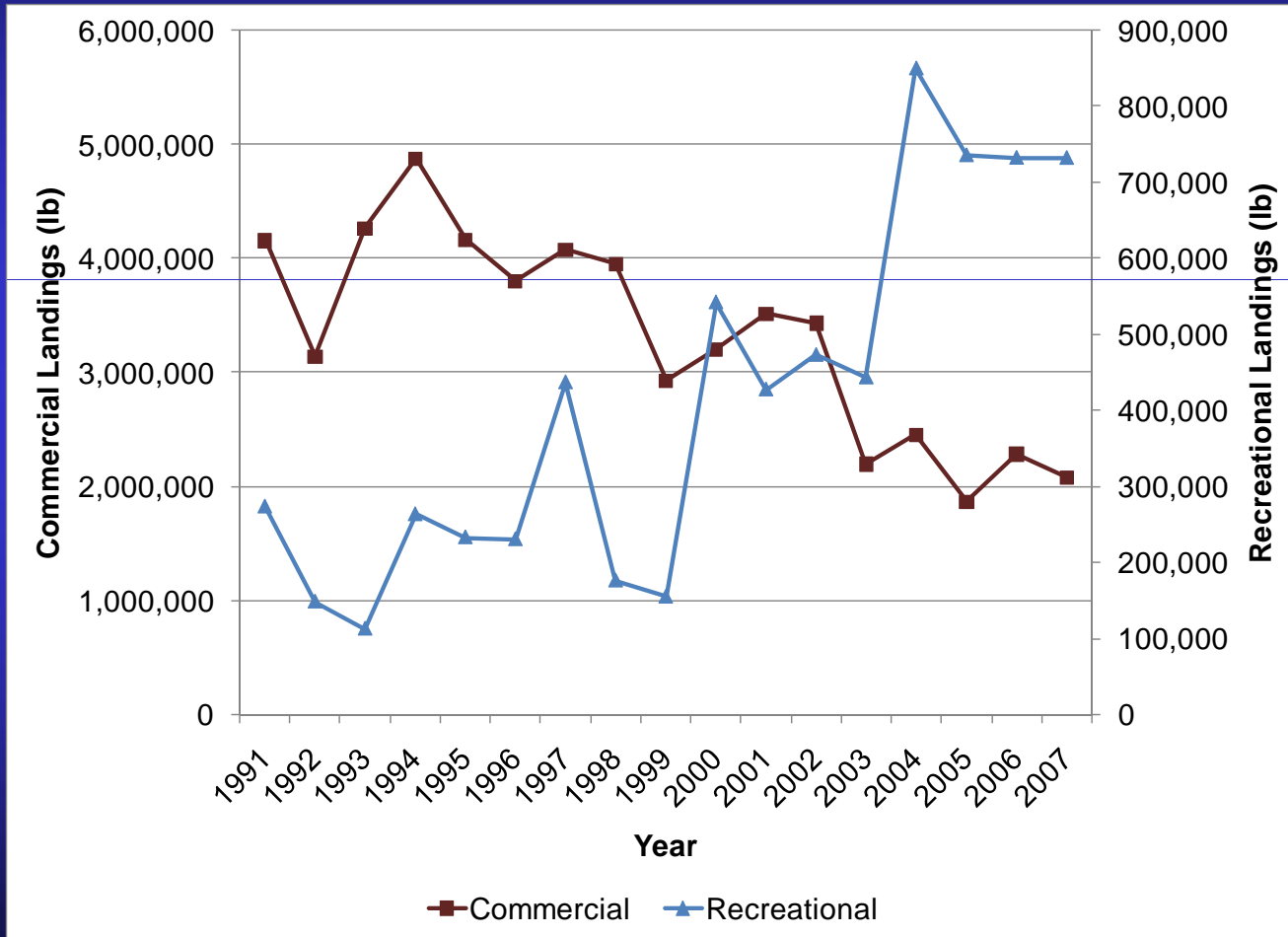


Available Data

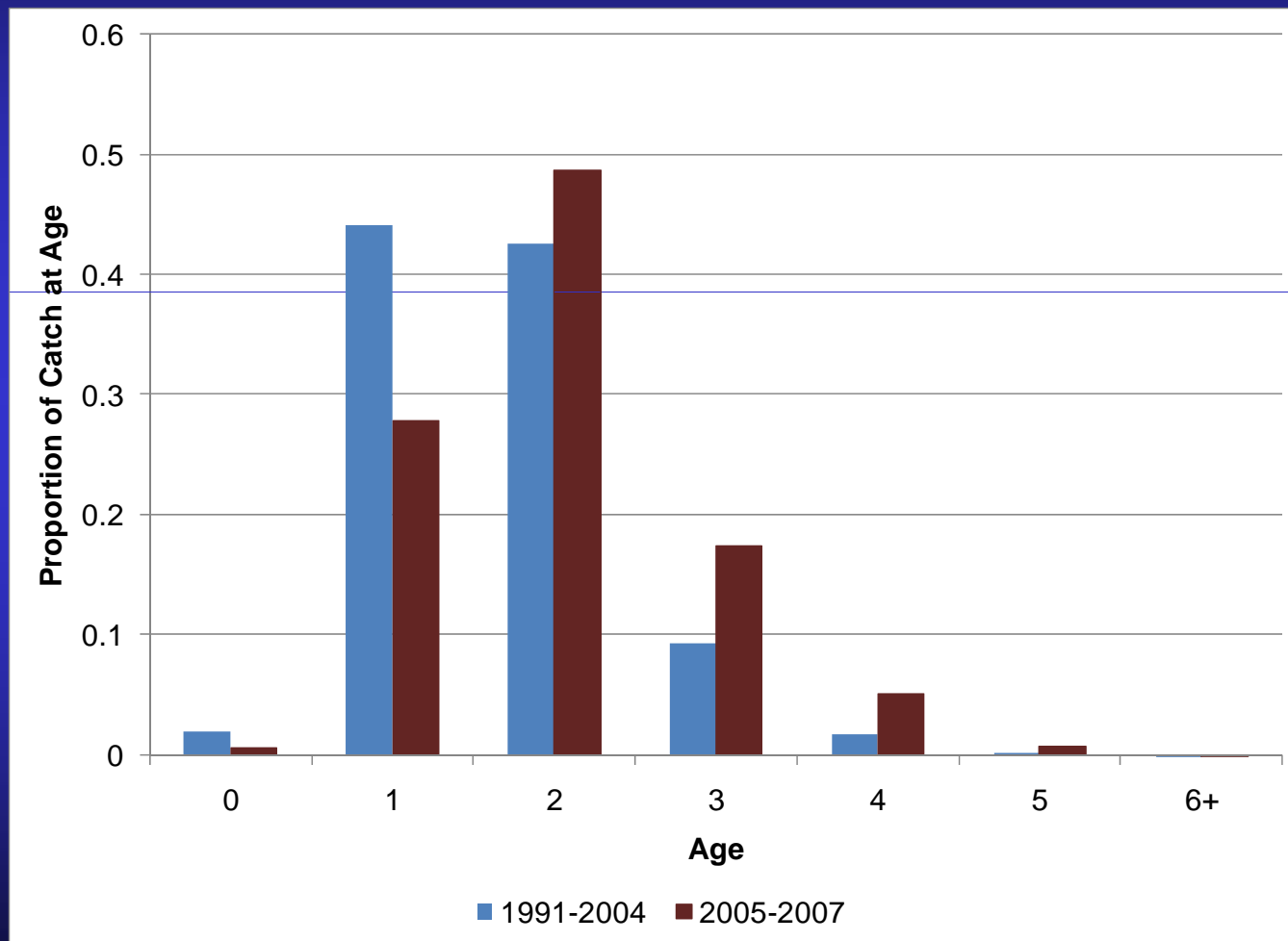
- NC only, female only stock assessment, 1991-2007
- Commercial and recreational landings
 - Commercial gill net and recreational discards
- Commercial and recreational length frequencies
- Age, growth and maturity data
- Indices of abundance
 - Fishery dependent (commercial gill net and recreational hook and line fishery)
 - Fishery independent (Albemarle Sound IGNS, Pamlico Sound IGNS, Pamlico Sound Trawl, Estuarine Trawl, and Beaufort Inlet Ichthyoplankton Sampling Program)



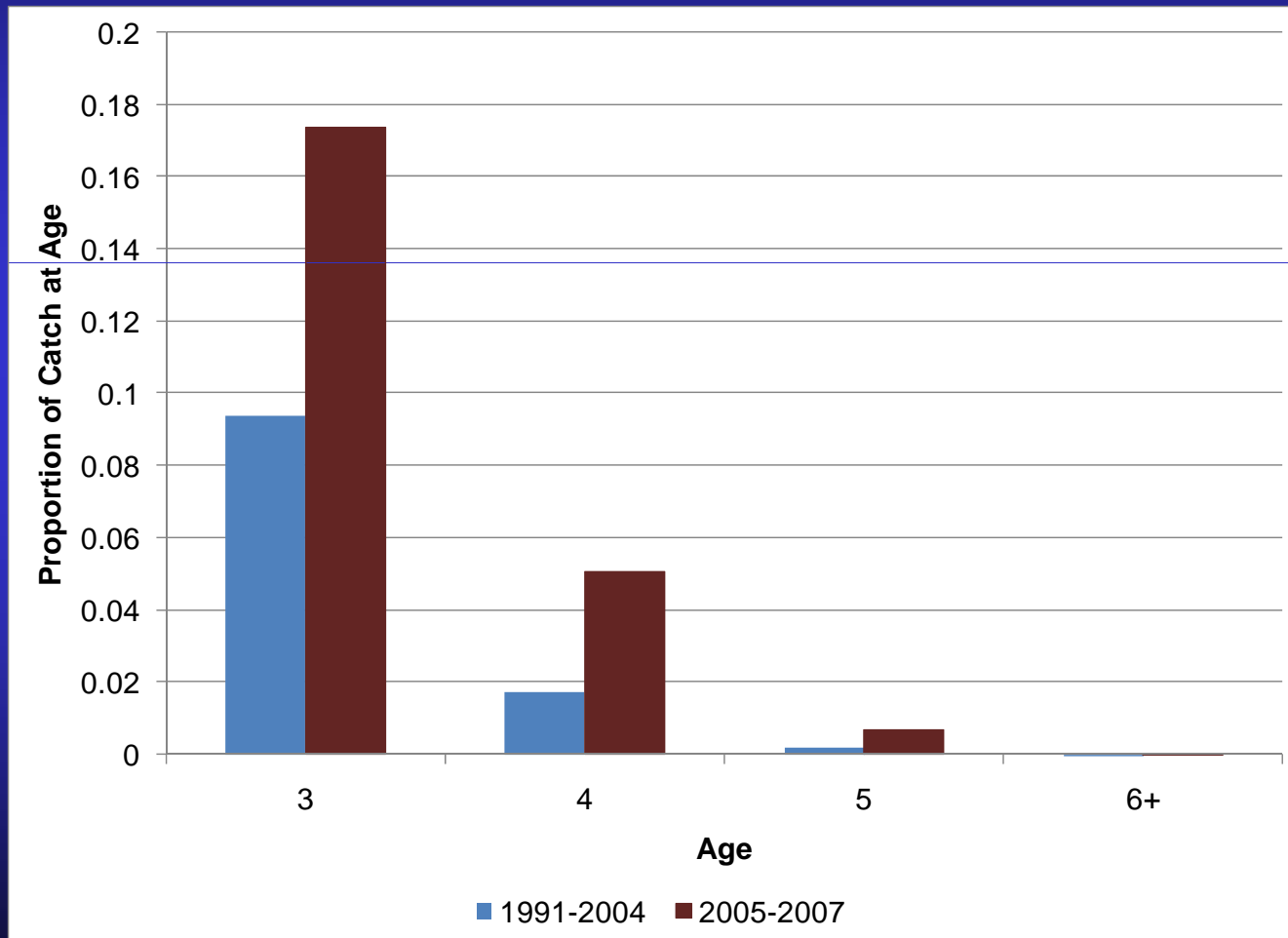
Landings



Proportional Catch at Age



Proportional Catch at Age – Older Ages

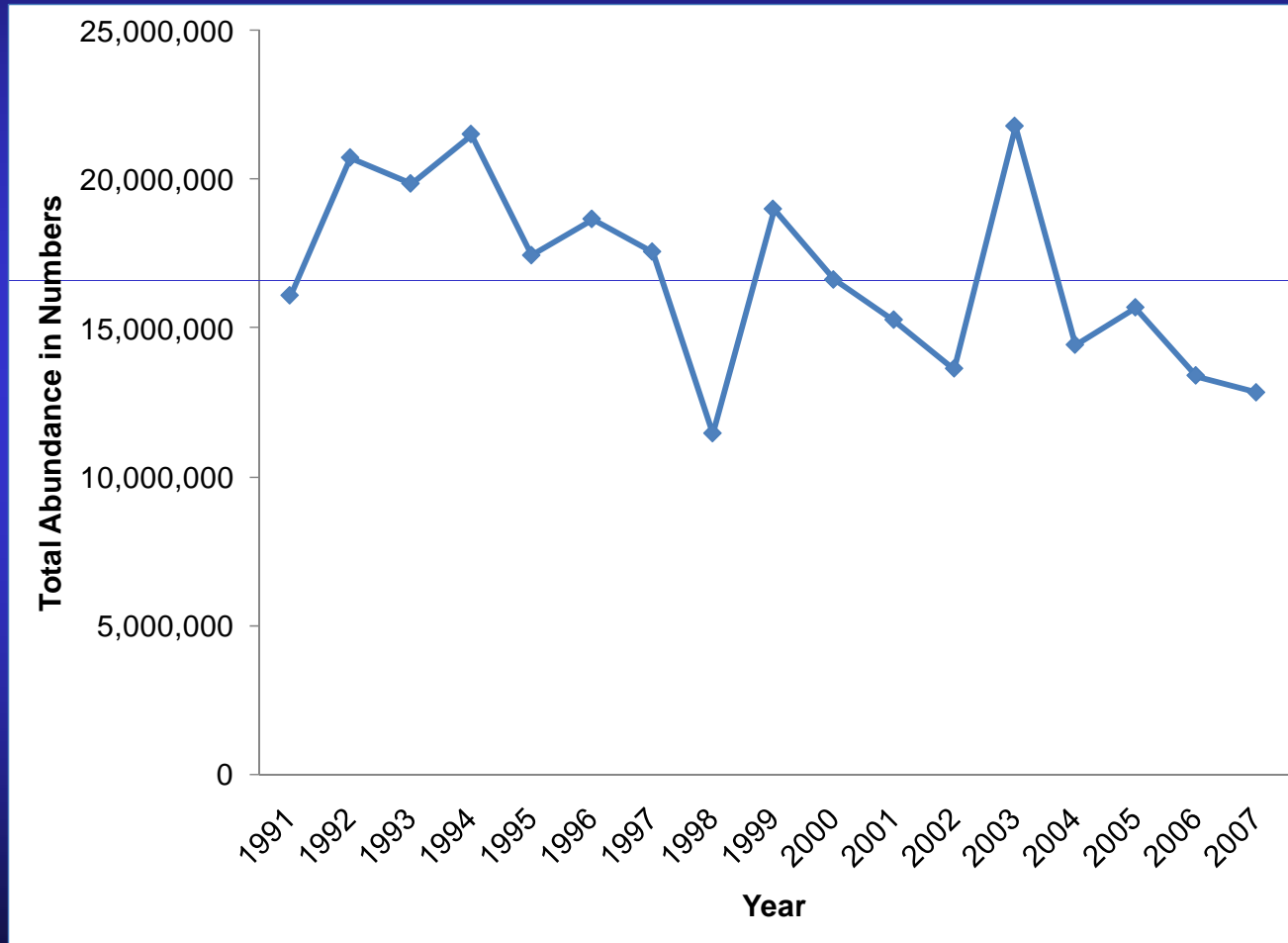


Model

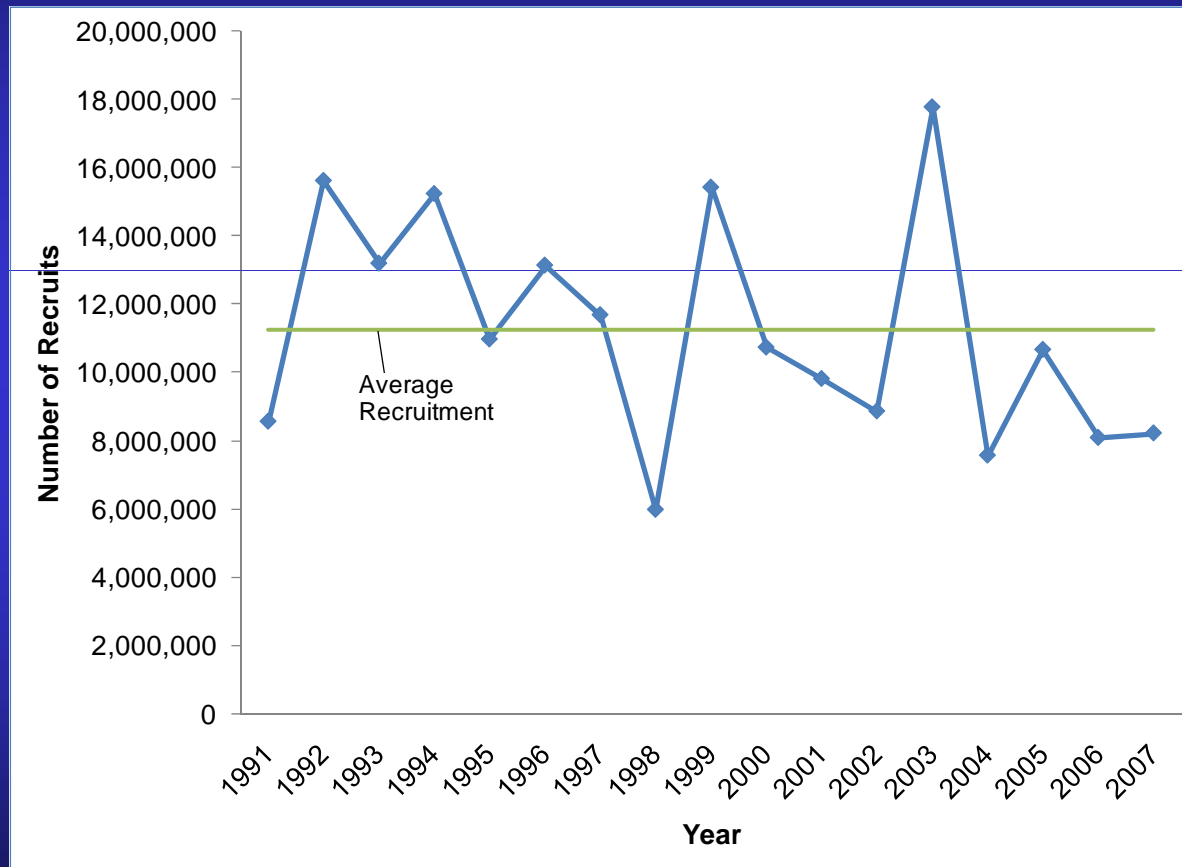
- Age Structured Assessment Program (ASAP)
 - Statistical Catch-at-Age model
- Estimates population status based on:
 - Observed catches
 - Catch-at-age
 - Indices of abundance
- ASAP model used for most recent peer-reviewed summer flounder and spotted sea trout stock assessments
- YPR model was used to determine potential F and SSB benchmarks



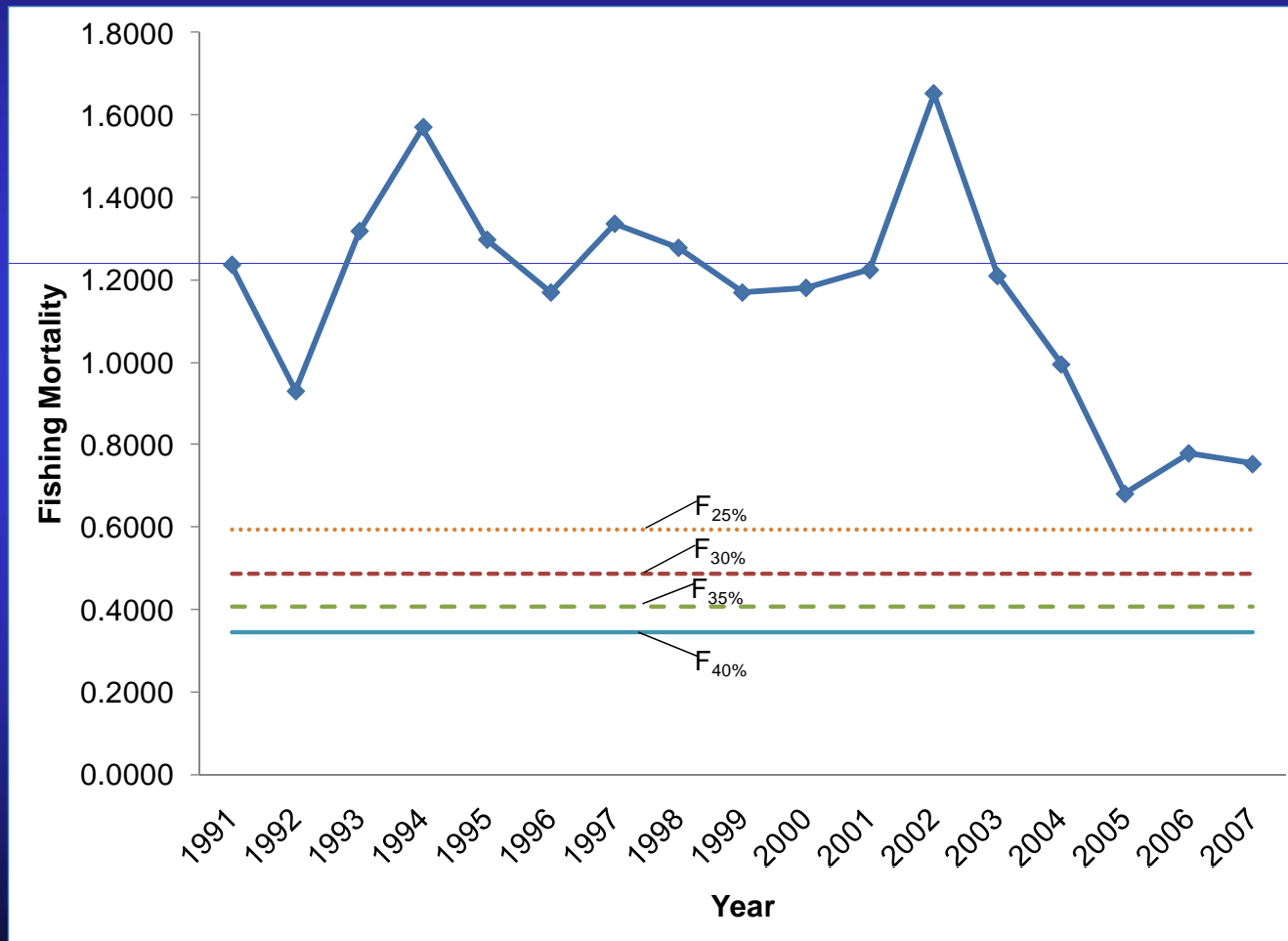
Total Abundance



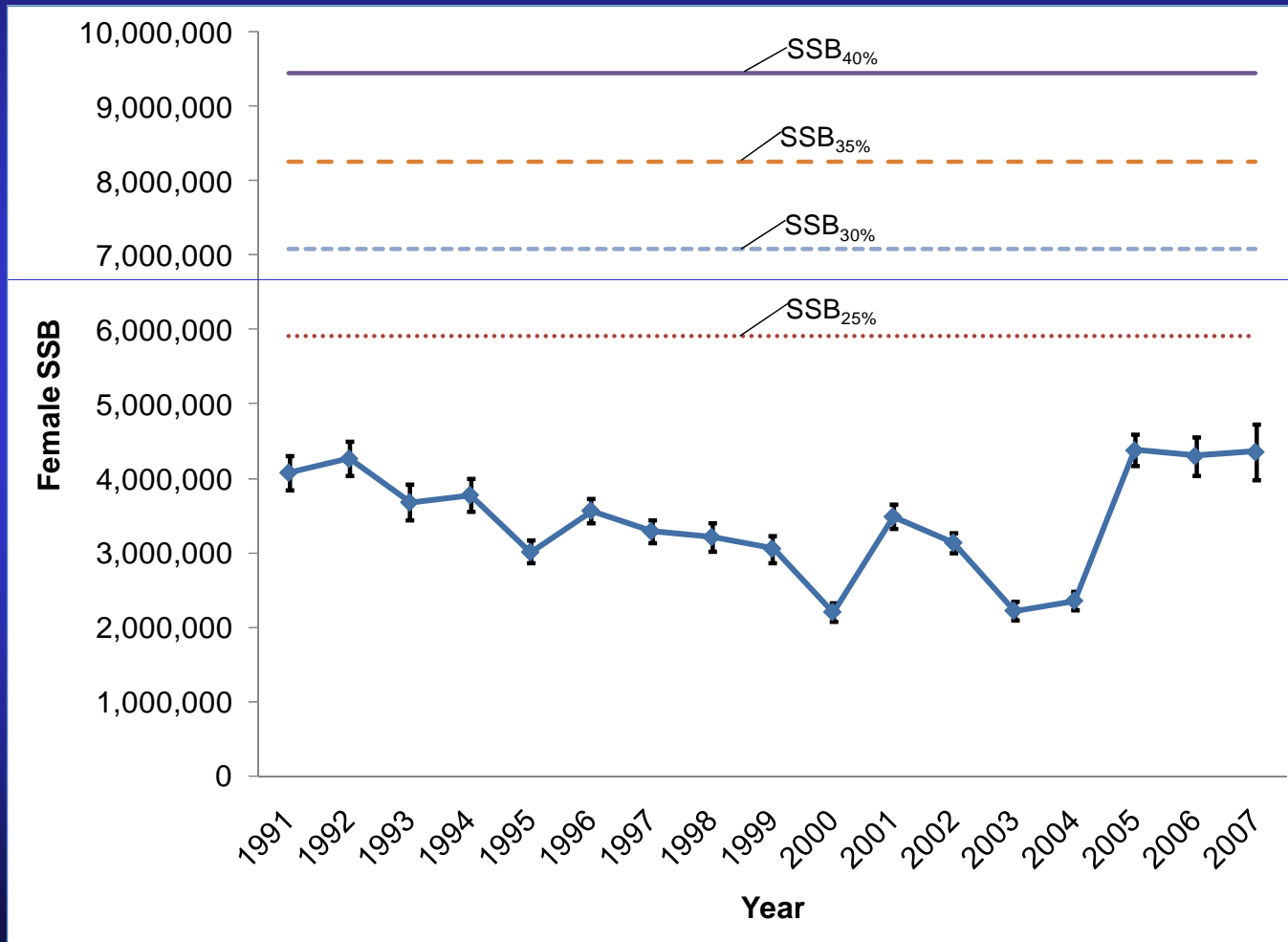
Recruitment



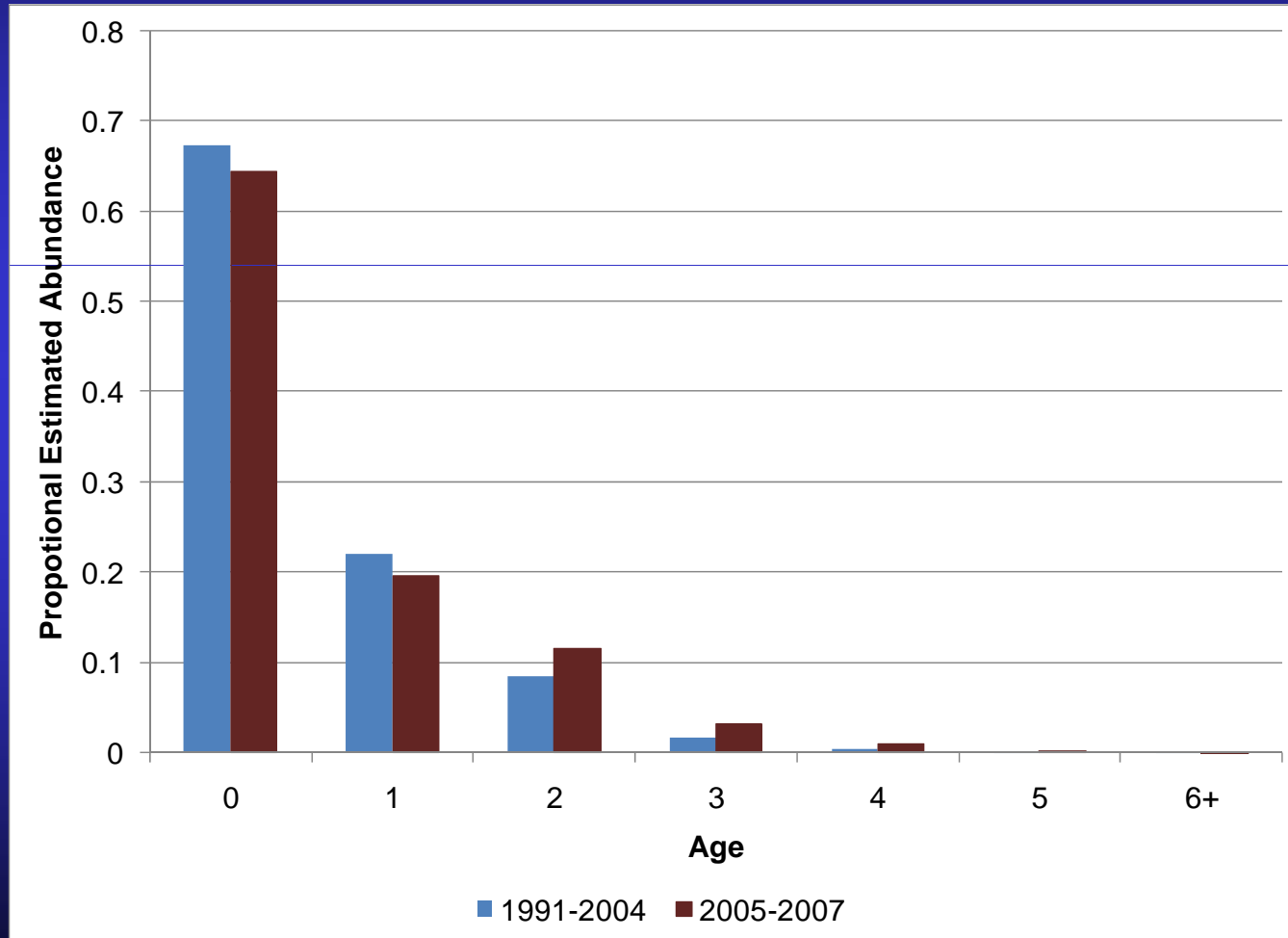
Fishing Mortality



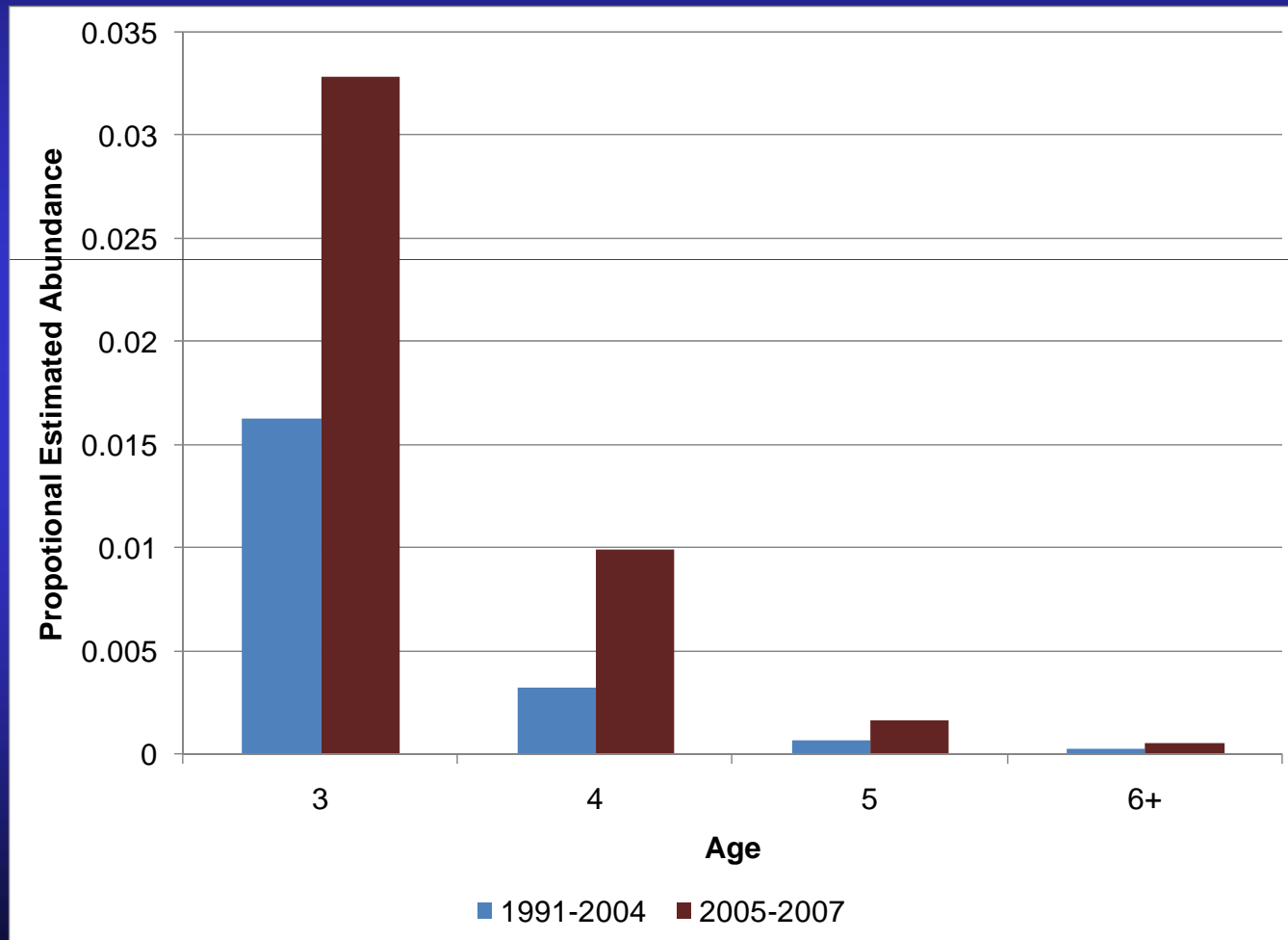
Spawning Stock Biomass



Proportional Population Age Structure



Proportional Population Age Structure – Older Fish



Conclusions

- The NC southern flounder stock is remains overfished and overfishing is still occurring
- F has decreased and SSB has increased in recent years, indicating some improvements in the stock
 - Partially the result of the management measures from the 2005 FMP



Conclusions

- Age structure has expanded in both the catch and estimated population abundance
- Catch relies heavily on age-1 and age-2 fish
 - 94% of age-2 and 100% of age-3 female fish are sexually mature
 - Incoming recruitment is very important

